



Montana Department of Transportation

Stage 2 - Research Topic Statement

2701 Prospect Avenue
PO Box 201001
Helena, MT 59620-1001
www.mdt.mt.gov

Print Form

RESEARCH PROGRAMS USE ONLY

RESEARCH IDEA NO:	23-005
DATE OF RECEIPT:	11-7-22
TOTAL MDT COST W/ICAP:	

RESEARCH PROGRAMS

Please submit completed forms via e-mail to MDTResearch@mt.gov. All fields are required, except the last field: XVIII, Sponsor(s). Incomplete forms will not be accepted.

TITLE (required): An Inventory and Assessment of Bank Stabilization Techniques

TOPIC STATEMENT: Assessment of MDT bank stabilization designs to determine future design methodologies.

RELATED RESEARCH SUMMARY FROM STAGE 1:

See attached.

RESEARCH PROPOSED:

A summary and inventory of completed bank stabilization projects and their outcome/success. Projects should be analyzed based on location, river/stream size, local hydrology, and hydraulic characteristics. Design recommendations or guidelines will be made at the end of the study in regards to the appropriate treatment selections for stream bank stabilization projects. Multiple sites identified by MDT and recommended by the consultant utilizing various designs by MDT and others should be visited and summarized in a final report. MDT will provide a list of sites to be evaluated in addition to sites that are recommended by the consultant. Assume up to 30 sites will need to be evaluated.

RESEARCH PERIOD (Time to complete research project.):

One year from notice to proceed.

IT COMPONENT: Identify if the project includes an IT component (purchasing of IT hardware, development of databases, acquisition of existing applications, etc.). If so, describe IT component in as much detail as possible.

None

FEASIBILITY, PROBABILITY OF SUCCESS, AND RISK:

The research is feasible given its minimal equipment and personnel requirements. High probability of success in helping guide future design methodologies. Since the research addresses projects that have already been constructed, there is low risk associated with the research.

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URGENCY, IMPORTANCE, AND EXPECTED BENEFITS/PAY-OFF: Address urgency, timeliness, and importance of the research. Identify if the research is required for any federal or state initiative or compliance. This section must include a description of how this research will help to meet MDT's mission (i.e., serve the public by providing a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality and/or sensitivity to the environment).

The research will help MDT create improved stream bank stabilization designs. Improved designs will also assist in the approval by FWP which will increase the speed and efficiency of delivering MDT projects to the public. It will help to foster better relationships with FWP, create more environmentally sound designs, and help protect Montana's infrastructure. We are interested in designs that are resilient.

IMPLEMENTABILITY, IMPLEMENTATION PLAN, AND RESPONSIBILITY: Address the implementability of the expected results from the proposed project. Identify products that will enhance implementation. Identify any known implementation barriers and how these barriers might be eliminated or reduced. Identify MDT office or entity outside of MDT responsible for implementation. Describe initial implementation plan, include timeframe for implementation.

The project is implementable with a consultant hired to do the work. Currently, time and availability of MDT staff is a barrier. A consultant with geomorphology expertise is also better suited to analyze site design outcomes and make recommendations for future design. The end product will be a report with a decision matrix or other guiding tool that will evaluate past designs and include design recommendations for future products. This is an opportunity to change how we do our business and include follow ups on projects to ensure design methodologies are resilient.

MDT PRIORITY FOCUS AREAS: MDT may, as often as annually, identify priority research focus areas. These focus areas will be listed on <http://www.mdt.mt.gov/research/unique/solicit.shtml>.

TOTAL COST ESTIMATE (If the project proposal comes in at a higher cost, it may require further approval and may be delayed.):

\$75,000

MDT FUNDING SOURCE (If MDT Research, enter SPR): SPR

FUNDING MATCH SOURCE AND AMOUNT: None

FUNDING PARTNER(S): None

POTENTIAL TECHNICAL PANEL MEMBERS (At this time, individuals do not necessarily need to be identified; rather, MDT offices and outside entities can be named. However, if known, individuals may be named):

MDT Hydraulics (Jennifer Johnson and Annette Compton), MDT Environmental Biologist, MDT Constructibility Reviewer (John MacMillan)

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SUBMITTED BY: (required)	
NAME:	Jennifer Johnson
TITLE:	Hydraulics Design Engineer
AFFILIATION:	MDT Hydraulics
ADDRESS:	2701 Prospect Avenue, Helena, MT 59620
PHONE NO.:	406 672 4879
E-MAIL:	jjohnson@mt.gov

CHAMPION: Must be internal to MDT, feel strongly that the research will benefit the Department, and is willing to chair the technical panel. **Note:** If a champion is not identified by you or Research staff, this topic statement will not move forward.

NAME:	Jennifer Johnson
TITLE:	Hydraulics Design Engineer
AFFILIATION:	MDT Hydraulics
ADDRESS:	2701 Prospect Avenue, Helena, MT 59620
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E-MAIL:	jjohnson@mt.gov

SPONSOR(S) (optional): Must be internal to MDT (Division Administrator or higher) and willing to ensure implementation occurs, as appropriate. If a sponsor is not identified by you or Research staff, this topic statement will not move forward.

NAME:	Dustin Rouse
TITLE:	Highways & Engineering Division Administrator
AFFILIATION:	MDT
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